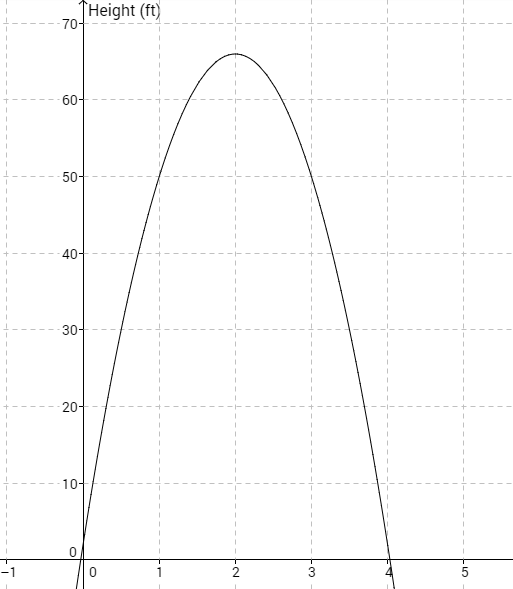
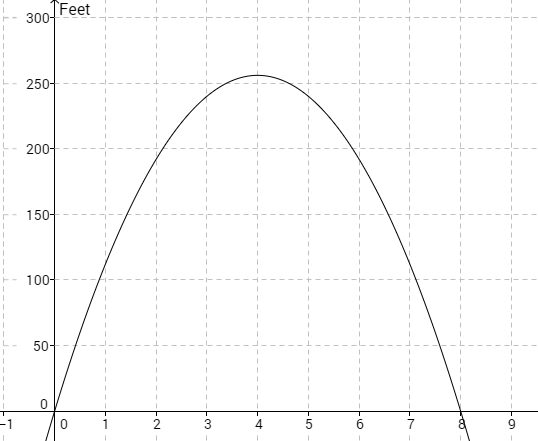
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CW 25: Quadratics in Context + Solutions

**Honors Geometry**

1. Bridget hits a softball that travels up in the air. The graph below shows the (time, height) relationship as the ball leaves her bat, travels through the air and finally falls to the ground.
   1. Draw in the axis of symmetry. What is the equation of the axis of symmetry?
   2. Mark the location of the **maximum** height with point A. What was that height?
   3. What is the height of the ball at 1 second? Mark it with point B.
   4. Consider the height that you recorded in part c. Mark on your graph the point when the ball was the same height as in part c but at a different time. Label this with **point C**.
   5. When did the ball hit the ground? Label this with point E.



2. The height *h* of a fireball launched from a Roman candle with an initial velocity of 128 feet per second is given by the equation where *t* is the time in seconds after launch. Use the graph of this function to answer the questions.

a. Find the axis of symmetry of the function.

b. What time is the fireball at its maximum height?

c. What is the maximum height of the fireball?

d. What time will the fireball hit the ground?

3. A compass is accidentally thrown upward and out of an air balloon at a height of 300 feet. The height, *y*, of the compass at time *x* in seconds is given by the equation .

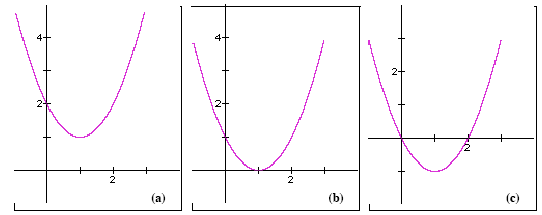
a. What is the equation of the axis of symmetry of the function?

b. What is the vertex of the function?

b. Create a table and find the height of the compass at 1, 2, 3, 4 and 5 seconds.

b. Use the table to determine when the compass strikes the ground.

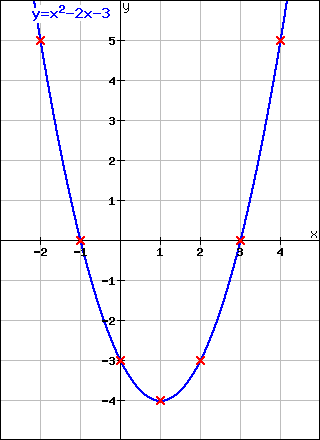
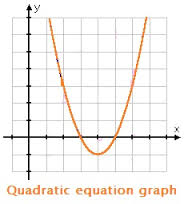
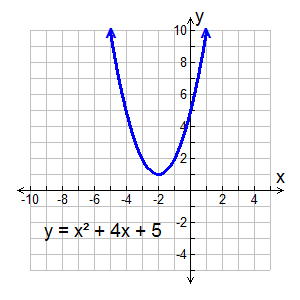
c. What is the maximum height of the compass?

**Solutions of Quadratic Functions:**

What do the solutions of a quadratic represent?

**No Solution 1 Solution 2 Solutions**

Identify the zeroes of the function from the graphs.



1. Identify the solutions of by graphing.
2. Find the vertex of the function.
3. Complete a table of values in order to graph.
4. Identify the solutions (Write them as ordered pairs!)
5. Solve by graphing. (*Is this equation in standard form?)*
6. Find the vertex of the function.
7. Complete a table of values in order to graph.
8. Identify the solutions (Write them as ordered pairs).
9. Find the zeroes (solutions) of
   1. Find the vertex of the function.
   2. Complete a table of values in order to graph.
   3. Identify the solutions (Write them as ordered pairs).
10. Find the zeroes of the function .
    1. Find the vertex of the function.
    2. Complete a table of values in order to graph.
    3. Identify the solutions.